

Claims:

1. A protective cap for at least one contact tube (40, 41) of a welding torch (10) each provided with a bore for guiding and contacting a respectively fed welding wire, which protective cap includes a housing (33) made of, or coated with, a poorly electrically conductive material and adapted to receive said contact tube (40, 41), and a bore (31, 32) provided therein to allow the exit of the welding wire (13), characterized in that at least two openings (29, 30) for receiving at least two contact tubes (40, 41) are provided in the housing (33) and each opening (29, 30) is connected with a respective bore (31, 32) provided in the housing, wherein each bore (31, 32) is arranged in a manner corresponding with the course of the welding wire (13) within the contact tube (40, 41) in the installed state of the protective cap (27), so as to enable a respectively fed welding wire (13) to exit to a welding site through the bore of each contact tube (40, 41) and each bore (31, 32) of the protective cap (27).
2. A protective cap according to claim 1, characterized in that the housing (33) of the protective cap (27) is made of a material exhibiting a low tendency to metal spatter adherence.
3. A protective cap according to claim 1, characterized in that the housing (33) of the protective cap (27) is coated with a material exhibiting a low tendency to metal spatter adherence.
4. A protective cap according to claim 2 or 3, characterized in that the housing (33) of the protective cap (27) is made of ceramics.
5. A protective cap according to one or several of claims 1 to 4, characterized in that fastening elements (35) are arranged on an outer surface (34) of the housing (34) to enable the establishment of a clamping or screwing connection with a gas nozzle (28) of the welding torch (10).
6. A protective cap according to claim 5, characterized in that the fastening elements (35) are comprised of at least one web

(36) via which the protective cap (27) is connectible with the gas nozzle (28) in a manner that the protective cap (27) is held as the gas nozzle (28) is slipped on, or fastened to, the welding torch (10).

7. A protective cap according to one or several of claims 1 to 6, characterized in that at least one further opening (37) is provided for receiving further elements of the welding torch (10) and, in particular, for receiving a partial region of a torch body with the at least one contact tube (40, 41) fastened therein, thus enabling all conductive elements of the welding torch (10) to be covered by the protective cap (27) in the region of the gas nozzle (28), i.e., on the end of the torch body.
8. A protective cap according to one or several of claims 1 to 7, characterized in that bores (38) are provided on the housing (33) to allow a gas (8) fed by the welding torch (10) to exit into the region between the gas nozzle (28) and the protective cap (27).
9. A protective cap according to claim 8, characterized in that said bores are provided on the housing (33) in a radially peripheral manner.
10. A protective cap according to one or several of claims 1 to 9, characterized in that at least one contact tube (40, 41) is integrated in the housing (33) so as to form a sandwich component (39).
11. A protective cap according to claim 10, characterized in that least one contact tube (40, 41) is embedded in the housing (33) over a partial region.
12. A protective cap according to claim 10 or 11, characterized in that the contact tubes (40, 41) are made of an electrically conductive material, particularly copper or a copper alloy, thus providing current transfer to the welding wire (13).
13. A welding torch including at least two contact tubes (40,

- 41) enclosed by a common gas nozzle (28), wherein each contact tube is provided with a bore for guiding and contacting a respectively fed welding wire, characterized in that a protective cap (27) according to any one of claims 1 to 12 is placed at least over a partial region of the contact tubes (40, 41).
14. A welding torch according to claim 13, characterized in that at least two openings (29, 30) for receiving the contact tubes (40, 41) and bores (31, 32) communicating with said at least one opening (29, 30) are provided in the housing (33) of the protective cap (27), said bores (31, 32), with the contact tubes (40, 41) arranged within the protective cap (27), extending in alignment or correspondence with the bores of the contact tubes (40, 41) so as to allow the fed welding wires (13) to exit to a welding site through the bores in the contact tubes (40, 41) and the bores (31, 32) of the protective cap (27).
15. A welding torch according to claim 13 or 14, characterized in that the contact tubes (40, 41) are made of an electrically conductive material, thus providing current transfer to the welding wires (13).
16. A welding torch according to claim 15, characterized in that the contact tubes (40, 41) are made of copper or a copper alloy.